What is claimed is:

1.   A mobile station comprising:

a measuring unit which measures a present position of said mobile station using radio wave;

5   a map database which stores a map data, which comprises an identifier to identify of each of a plurality of wireless LAN access points connecting to a wireless communications network, a connection data to communicate with said each wireless LAN access point

10 and a position data indicating a setting position of said each wireless LAN access point;

a control unit which refers to said map database based on said present position of said mobile station to choose an optimal wireless LAN access point

15 from said plurality of wireless LAN access points based on said present position of said mobile station; and

a communication unit which communicates with another station based on said connection data of said optimal wireless LAN access point.

20

2.   The mobile station according to claim 1, further comprising a setting table,

wherein said measuring unit calculates a distance between said present position of said mobile

25 station and said setting position of said each wireless LAN access point in response to completion of measuring said present position,

said map data further comprises a maximum

transmission distance of said each wireless LAN access

point, in addition to said identifier, said connection

data and said position data of said each wireless LAN

5   access point,

said control unit refers to said map database

and chooses said nearest optimal wireless LAN access

point from said present position of said mobile station

on condition that said distance is smaller than said

10   maximum transmission distance of said each wireless LAN

access point,

said control unit sets said connection data of

said optimal wireless LAN access point in said setting

table, and

15   said communication unit refers said setting

table to communicate with said optimal wireless LAN

access point.

3.   The mobile station according to claim 2,

20   wherein said measuring unit measures said present

position of said mobile station by a communication with

GPS (Global Positioning System) satellite or a PHS

(Personal Handyphone System) communication.

25   4.   The mobile station according to claim 3,

further comprising a power unit which supplies electric

power to said measuring unit, said control unit and said communication unit,

   wherein in case that said mobile station does not exist in a location where it is possible to

5 communicate with any of said plurality of wireless LAN access points, said control unit controls said power unit to stop supplying electric power to said communication unit,

   said measuring unit measures said present

10 position by using said radio wave,

   said control unit refers to said map database and chooses said optimal wireless LAN access point from said plurality of wireless LAN access points,

   in case that said mobile station exists in a

15 location where it is possible to communicate with any of said plurality of wireless LAN access points, said control unit controls said power unit to supply electric power to said communication unit, and

   said communication unit communicates with said

20 optimal wireless LAN access point based on said connection data of said optimal wireless LAN access point.

5.   The mobile station according to claim 4,

25 wherein said map database further contains a setting data provided for each of said plurality of wireless

LAN access points and indicating a received electric

field strength, and

said control unit refers to said setting data

based on a preset received electric field strength to

5   determines a group of wireless LAN access points and

chooses said optimal wireless LAN access point from

said group of wireless LAN access points.

6.   The mobile station according to claim 5,

10   wherein each of said plurality of wireless LAN access

points transmits through radio wave to said mobile

station,

said communication unit receives said radio

wave to detect the received electric field strength of

15   said radio wave, and

said control unit sets the received electric

field strength in said setting data said each wireless

LAN access points.

20   7.   The mobile station according to claim 4,

wherein said map database further contains a traffic

quantity data indicating a traffic quantity in

communication of said mobile station with each of said

plurality of wireless LAN access points, and

25   said control unit refers to said traffic

quantity data based on a preset traffic quantity data

to determines a group of wireless LAN access points and

chooses said optimal wireless LAN access point from said group of wireless LAN access points.

8.   The mobile station according to claim 7,
5   wherein said communication unit detects said traffic quantity data in a communication with each of said plurality of wireless LAN access points, and
        said control unit sets the detected traffic quantity data in said setting data for said each
10 wireless LAN access point.

9.   The mobile station according to claim 4, wherein said map database further contains a setting data provided each of said plurality of wireless LAN
15 access points to indicate a connection fee, and
        said control unit refers to said setting data based on a preset connection fee to determines a group of wireless LAN access points and chooses said optimal wireless LAN access point from said group of wireless
20 LAN access points.

10.   The mobile station according to claim 4, wherein said map database further contains a setting data provided for each of said plurality of wireless
25 LAN access points to indicate a service area of said each wireless LAN access point, and

said control unit refers to said setting data based on a preset service area to choose said optimal wireless LAN access point from said group of wireless LAN access points.

5

11.   The mobile station according to claim 4, wherein said communication unit downloads the latest map data from an ISP server connected to said wireless communications network during said communication,

10   said latest map data contains an updated data of said optimal wireless LAN access point in said plurality of wireless LAN access points, and

said control unit stores the latest map data in said map database.

15

12.   The mobile station according to claim 4, wherein said communication unit communicates with each of said plurality of wireless LAN access points based on a setting data for said each wireless LAN access

20 point to keep a QoS (Quality of Service) constant.

13.   The mobile station according to claim 4, further comprising a display unit,

wherein said map database stores said map data

25 which further comprises a service data of buildings in a neighborhood of each of said plurality of wireless LAN access points, and

said control unit refers to said map data and
control said display unit to display said service data
of the optimal wireless LAN access point.

5   14.   The mobile station according to claim 4,
further comprising:

a communication table which stores an
identifier of a counter station, data of said counter
station and a keyword,

10   wherein said communication unit refers to said
communication table to inform said counter station of
said present position corresponding to said keyword in
case that a data in said communication includes said
keyword.

15

15.   A method of an automatic connection to a
wireless LAN access point in a wireless LAN
communication system, comprising:

(a) measuring a present position of a mobile
20   station by a radio wave;

(b) choosing an optimal wireless LAN access
point based on said present position from a plurality
of wireless LAN access points by referring a map
database storing a map data which stores an identifier
25   of each of said plurality of wireless LAN access points
connected to a wireless communications network, a
connection point of said each wireless LAN access point

and a connection data needed to communicate with said

each wireless LAN access point;

(c) communicating with a counter station based

on said connection data of said optimal wireless LAN

5   access point;

(d) downloading the latest map data from an ISP

server which is connected to said wireless

communications network, when said communication is

carried out;

10   (e) storing said latest map data into said map

database as said map data.

16.   The method according to claim 15, further

comprising:

15   (f) calculating a distance between said present

position and said connection point, wherein said

plurality of wireless LAN access points measures said

connection points using said radio wave;

(g) choosing said optimal wireless LAN access

20 point which is the nearest to the mobile station from

said plurality of wireless LAN access points on

condition that said distance is smaller than a maximum

transmission distance by referring to said map database.

25 17.   The method according to claim 16, wherein:

said present position is measured by at least

one of communication with GPS or communication with PHS.

18.   The method according to claim 17, further comprising:

(h) setting said connection data of said

5   optimal wireless LAN access point to a setting table,

wherein said (c) communicating includes

acquiring said connection data of said optimal wireless

LAN access point by referring to said setting table.

10 19.   The method according to claim 18, wherein said

(a) measuring and said (b) choosing is executed when

said mobile station does not exist in a service area of

any of said plurality of wireless LAN access point, and

said (c) communicating is carried out when

15 mobile station exists in said service area of any of

said plurality of wireless LAN access point.

20.   The method according to claim 19, wherein said

map database stores a setting data,

20   said (b) choosing comprises:

choosing a group of wireless LAN access points

from said plurality of wireless LAN access point based

on a preset connection fee as said setting data; and

choosing said optimal wireless LAN access point

25 from said group of wireless LAN access points.

21.   The method according to claim 19, wherein said map database further stores a setting data,

said (b) choosing comprises:

choosing a group of service areas from a
5   plurality of service areas of said plurality of wireless LAN access points as said setting data; and

choosing said optimal wireless LAN access point from said plurality of wireless LAN access point based on said group of service areas.
10

22.   The method according to claim 19, wherein said map database further stores a setting data;

said (b) choosing comprises:

choosing a group of wireless LAN access points
15 from said plurality of wireless LAN access points based on electric field strengths received when each of said plurality of wireless LAN access points transmits radio wave;

choosing said optimal wireless LAN access point
20 from said group of wireless LAN access points.

23.   The method according to claim 22, wherein said (c) communicating includes:

storing each of said electric field strengths
25 in communication with each of said plurality of wireless LAN access points in said map database.

24.   The method according to claim 19, wherein said map database further stores a setting data,

said (b) choosing comprises:

choosing a group of wireless LAN access points

5   from said plurality of wireless LAN access points based on a traffic quantity of each of said plurality of wireless LAN access points; and

choosing said optimal wireless LAN access point from said group of wireless LAN access points.

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25.   The method according to claim 24, wherein said (c) communicating includes:

storing said traffic quantity in communication with each of said plurality of wireless LAN access

15   points in said map database.

26.   The method according to claim 19, wherein said (c) communicating comprises:

communicating each of said plurality of

20   wireless LAN access points to keep a QoS (Quality of Service) constant which is stored previously for each of said plurality of wireless LAN access points.

27.   The method according to claim 19, wherein said

25   map data further a service data of buildings in a neighborhood of each of said plurality of wireless LAN access points, and

said (b) choosing includes displaying said
service data of the optimal wireless LAN access point.

28.   The method according to claim 19, wherein said
5   (c) communication includes informing said present
position to said counter station when a data in said
communication contains a keyword.